

## CLIMATOLOGICAL DATA FOR WEATHER BUREAU STATIONS—Continued

| District and station | Elevation of instruments  |                          |                         | Pressure |           |                       | Temperature of the air |                       |         |      |      |         |      |      |         |                      | Total degree days | Mean temperature of the dew point | Mean relative humidity | Precipitation |                       |                      |                             | Wind                    |                      |                  |           |      | Clear | Partly cloudy days | Cloudy days | Average cloudiness, tenths | Total snowfall | Snow, sleet, and ice on ground at end of month | Number of days with thunderstorms |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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|                      | Barometer above sea level | Thermometer above ground | Anemometer above ground | Station  | Sea level | Departure from normal | Mean                   | Departure from normal | Maximum | Date | Mean | Minimum | Date | Mean | Minimum | Greatest daily range |                   |                                   |                        | Total         | Departure from normal | Greatest in 24 hours | Days with 0.01 inch or more | Average hourly velocity | Prevailing direction | Maximum velocity |           |      |       |                    |             |                            |                |  |                                   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                      |                           |                          |                         |          |           |                       |                        |                       |         |      |      |         |      |      |         |                      |                   |                                   |                        |               |                       |                      |                             |                         |                      | Miles per hour   | Direction | Date |       |                    |             |                            |                |  |                                   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Alaska               |                           |                          |                         |          |           |                       |                        |                       |         |      |      |         |      |      |         |                      |                   |                                   |                        |               |                       |                      |                             |                         |                      |                  |           |      |       |                    |             |                            |                |  |                                   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

<sup>1</sup> Data are airport records.<sup>2</sup> Barometric data (adjusted to old city elevation) and hygrometric data from airport; otherwise city office records.<sup>3</sup> Observations taken bihourly.<sup>4</sup> Pressure (adjusted to old city elevation), temperature, and hygrometric data from airport; otherwise city office records.<sup>5</sup> Temperature and precipitation from city records, other data from airport.NOTE.—Except as indicated by notes <sup>1</sup>, <sup>2</sup>, <sup>4</sup>, and <sup>5</sup> data in table are city office records.

## SEVERE LOCAL STORMS, AUGUST 1944

[Compiled by Mary O. Souder]

[The table herewith contains such data as has been received concerning severe local storms that occurred during the month. A revised list of tornadoes will appear in the United States Meteorological Yearbook]

| Place   | Date     | Time                      | Width of path, yards | Loss of life | Value of property destroyed | Character of storm      | Remarks  |
|---|----------|---------------------------|----------------------|--------------|-----------------------------|-------------------------|--|
| Rockville, Ind.   | August 1 | p. m.                     |                      |              | \$500                       | Wind                    | Trees and wires down; 6 persons injured by a falling tree.   |
| Ainsworth, Nebr.  | 2        | 3:30 p. m., C. W. T.      | 15                   |              |                             | Heavy hail              | Tops, fenders and windshields of cars damaged; path 15 miles long. Estimate in many thousands of dollars.  |
| Dalton, Nebr.   | 2        | 5:30-6:30 p. m., M. W. T. | 12                   |              |                             | Hail                    | Loss in small grains; corn stripped; gardens destroyed; windows broken; some loss in poultry; much property destroyed; path 25 miles long.   |
| Hay Springs, Nebr.  | 2        | 7 p. m., C. W. T.         |                      |              |                             | do                      | Value of property destroyed considerable. Principal loss in corn and small grain; windows broken; roofs damaged.   |
| Davis, S. Dak., west of                                       | 2        | 10:10 p. m.               | 880                  |              | 14,000                      | Wind                    | West-southeast winds for a distance of 5 miles wrecked buildings valued at \$10,000; crop loss, \$4,000.   |
| Montana, 8 counties   | 2        | p. m.                     |                      |              | 1,000,000                   | Heavy hail and wind     | Until this storm Montana farmers had anticipated a record crop year.   |
| Malone, N. Y., vicinity of                                    | 2        |                           |                      |              | 1,500                       | Electrical              | 2 barns burned; loss over \$1,500.   |
| Potsdam, N. Y.  | 2        |                           |                      |              | 4,000                       | do                      | Electric power service disrupted; 2 barns burned; damage over \$4,000.   |
| Becker, Hubbard, Otter Tail, Wadena, and Cass Counties, Minn. | 3        | 7 p. m., C. W. T.         | 15                   |              | 150,000                     | Thunderstorm and hail   | Crop loss, \$125,000; property damage, \$25,000.   |
| Minnesota, central counties.                                  | 3        | do                        |                      | 1            | 362,000                     | Thundersqualls and hail | Several large commercial ice houses wrecked; plate glass windows blown in; rowboat on lake capsized; automobile blown off the road; radio towers, chimneys toppled; many barns, outbuildings and silos, and windmills demolished; poles and wires down; trees uprooted; thousands of turkeys and chickens killed; a number of persons injured, 1 fatally; growing crops lodged or otherwise damaged; shocks of grain shelled out, and haystacks scattered. General direction of the storm from northwest to southeast. There were several reports of rotary winds, but most observers reported straight winds. Uprooted trees lying on the ground were mostly in the same direction. |
| South Dakota, southeastern portion.                           | 3        | 7-10 p. m.                |                      |              | 200,000                     | Wind, rain and hail     | Several hundred buildings and windmills wrecked; power and telephone lines down; trees uprooted, some stock killed, and crops flattened.   |
| Fairmont, Minn.   | 3        | 10 p. m., C. W. T.        |                      |              | 2,500                       | Electrical              | Large barn struck by lightning and burned.   |
| Harrisburg, Nebr.   | 5        | 4 p. m., M. W. T.         | 11                   |              | 10,000                      | Hail and wind           | Principal crop loss in oats and barley. Gardens and corn stripped, and a granary lifted over the fence by the wind and destroyed; path 6 miles long.   |
| Del Norte, Colo.  | 5        |                           |                      |              | 16,500                      | Hail                    | 132 acres of various produce crops damaged or destroyed.   |
| Broken Arrow, Okla.   | 7        | 7 a. m.                   |                      |              | 60,000                      | Electrical              | A stable, 15 show horses, and equipment burned.  |
| Electra, Tex.   | 7        | 5 p. m.                   | 11                   |              |                             | Wind                    | About 20 farm residences damaged and utility lines blown down.   |
| Carthage, Tex.  | 7        | 5:30 p. m.                | 11                   |              | 80,000                      | do                      | Rain damage to unroofed buildings; at least 45 farm homes blown from their foundations.  |
| Elizabeth, Pa.  | 7        |                           |                      |              | 18,000                      | Electrical              | Barn burned.   |
| Sebek, Minn., and vicinity.                                   | 7        | P. m.                     |                      |              |                             | Rain and flood          | Heavy to excessive rains in connection with a severe thunderstorm resulted in a flash flood in the Red Eye River. Some farm lands flooded; several houses in Sebek isolated and highway was under water in several places.   |
| Polk, Norman, Red Lake, and Marshall counties, Minn.          | 8        | 7:30 p. m., C. W. T.      | 15                   |              | 47,000                      | Hail                    | Loss in crops, \$47,000; some property damage not estimated; path 60 miles long.   |
| Cottonwood, Idaho, vicinity of.                               | 8        | 7:30-7:45 p. m., M. W. T. | 15-6                 |              | 60,000                      | Moderate hail           | Small loss in wheat; considerable loss in peas, barley, and oats.  |

<sup>1</sup> Miles instead of yards.

## SEVERE LOCAL STORMS, AUGUST 1944—Continued

| Place   | Date | Time                             | Width of path, yards | Loss of life | Value of property destroyed | Character of storm                                 | Remarks   |
|---|------|----------------------------------|----------------------|--------------|-----------------------------|--|---|
| Polk, Norman, Red Lake, and Marshall counties, Minn.  | 8    | 7:30-11 p. m., C. W. T.          | 1 10                 | 0            | 277,000                     | Thundersqualls, possibly small tornado.            | About 50 barns, outbuildings, garages, silos, and windmills wrecked; farm and city residences and buildings damaged; windows broken; poles and wires down; hundreds of trees uprooted; growing crops lodged or damaged; grain shocks and haystacks scattered. Storm moved from northwest to southeast over a path about 60 miles long.  |
| Montana, eastern portion.   | 9    |                                  | 1 20                 |              |                             | Hail   | About 2,500,000 bushels of grain destroyed; livestock and poultry injured. Farmers anticipated a record yield of 40 bushels to the acre before the storm wiped out entire fields. Path 100 miles long.  |
| International Falls, Minn., and vicinity.   | 9-10 | 5:45 p. m.-12:30 a. m., C. W. T. |                      |              | 60,000                      | Electrical and heavy rain.                         | Barn destroyed and a house slightly damaged by lightning. Heavy to excessive rains flooded basements, damaged property; and caused loss in gardens.   |
| Chouteau County, Mont.  | 11   |                                  |                      |              | 400,000                     | Hail   | Greatest damage to crops in the vicinity of Geraldine section. Here the path of the storm was from 5-15 miles wide. Wheat that had been harvested ran from 35 to 50 bushels per acre. Barn burned.  |
| Theresa, N. Y., vicinity of.  | 12   |                                  |                      |              | 4,000                       | Electrical   |   |
| Osceola County, Iowa  | 13   | 5 p. m.                          | 1 3                  |              | 60,000                      | Hail and wind                                      | Principal loss in corn and soybeans. Property damaged, \$10,000; loss in crops about \$50,000; path 5 miles long.   |
| Chambersburg, Pa.   | 13   | 6 p. m.                          |                      |              | 15,200                      | Electrical and wind                                | Lightning caused 4 fires and damaged property; trees and wires down; barn unroofed.   |
| Bancroft and Titonka, Iowa, and vicinities.   | 13   | 7 p. m.                          | 1 3                  |              | 50,000                      | Wind and hail                                      | Property damaged; path about 10 miles long.   |
| Scotts Bluff County, Nebr., small spotted areas.  | 14   | 4:40 p. m., M. W. T.             | 2,640                |              | 100,000                     | do   | Loss in crops; path 20 miles long.  |
| Broadwater and Northport, Nebr., and vicinity.  | 14   | 5:30 p. m., M. W. T.             | 1 7                  |              | 180,000                     | Tornadoic wind and hail.                           | Storm moved from west to east. Principal loss in corn, beans, and potatoes. About \$5,000 damage to buildings from wind; path 12 miles long.  |
| Johnstown and Atkinson, Nebr., and vicinity.  | 14   | 9:30 p. m. M. W. T.              | 1 8                  |              | 10,000                      | Windsquall   | Crop loss, \$5,000; property damage, \$5,000.   |
| Worthington, Minn., vicinity of.  | 15   | 3:30 a. m., C. W. T.             |                      |              | 7,000                       | Electrical and hail                                | Barn, granary and sheds burned, loss, \$5,000; crop loss from hail in Nobles County, \$2,000.   |
| Cerro Gordo and Floyd Counties, Iowa.   | 15   | 12:30 p. m.                      |                      |              | 20,000                      | Wind and hail                                      | 2 barns wrecked; trees, wires, and small buildings damaged; path about 8 miles long.  |
| Chickasaw County, Iowa.   | 15   | 12:50 p. m.                      | 269                  | 0            | 4,000                       | Tornado and wind                                   | Strong wind occurred outside the tornado track. The path was 5 miles long and parallel to the one in Cerro Gordo County.  |
| Elsie Chapel, Kans., vicinity of.   | 15   | 6-7 p. m., C. W. T.              | 880                  |              |                             | Heavy hail   | Roofs damaged, windows broken, and feed crops beaten into ground. Path 1 mile long.   |
| Ford, Kans., and vicinity.  | 15   | 7 p. m.                          | 1 3                  |              | 10,000                      | do   | Many windows broken; row crops beaten into ground; path 8 miles long.   |
| Nemaha County, Kans.  | 15   | 7:30 p. m.                       | 1 4                  |              | 40,000                      | Wind and hail                                      | Many barns and farm buildings damaged or wrecked. Storm had tornadoic characteristics; chief damage from wind; path 20 miles long.  |
| Vernon, La Crosse, Monroe, Jackson, Wood, Portage, Waupaca, Waushara, Winnebago, Outagamie and Brown Counties, Wis. | 15   |                                  |                      | 2            | 925,000                     | Thunderstorm, heavy rain, and straight-line winds. | In Junction City a large warehouse, a new cold storage locker, and the city meat market were unroofed. In the whole area 41 barns were wrecked, approximately 35 buildings damaged, 140 shade trees destroyed and about 1,000 damaged. The largest single loss was a coal unloading bridge at Green Bay. The structure collapsed fatally injuring the man operating the bridge. A woman was fatally injured when struck by a piece of plank ripped from a pier. 5 persons injured and in addition to barns, many silos and smaller farm buildings were blown down. Considerable corn lodged, but final production not greatly affected. |
| Wisconsin central portion.  | 15   |                                  |                      |              | 16,000                      | Electrical   | 4 barns and contents and several livestock burned.  |
| Howard, S. Dak., vicinity of.   | 16   | 12:30 p. m.                      |                      |              | 15,000                      | Hail   | Serious loss in spots to crops.   |
| Pipestone and Nobles Counties, Minn.  | 16   | 2:15 - 3:25 p. m., C. W. T.      | 1 4                  |              | 33,000                      | Hail and thunderstorm.                             | Much damage to growing crops and some loss in real property and poultry. Storm moved northwest to southeast over a path about 60 miles long.  |
| Cerro Gordo County, Iowa.   | 16   | 6-8 p. m.                        | 1 1                  |              | 50,000                      | do   | Loss in corn and soybeans; some buckwheat destroyed. Loss in Mason City mostly to gardens.  |
| Gorham, Kans., 8 miles north.   | 16   | 7 p. m.                          |                      | 0            | 15,000                      | Tornado and hail                                   | A residence, several farm buildings, and 2 oil derricks blown down. Hail followed tornado, but its damage was small. Path narrow and a mile long.   |
| Floyd County, Iowa.   | 16   | 8:15 p. m.                       | 1 2                  |              | 25,000                      | Hail, electrical                                   | Property damaged; barn burned.  |
| Fayette County, Iowa.   | 16   | 9:30 p. m.                       | 1 2                  |              |                             | Hail   | Windows broken; roofs damaged; 70 percent of crops lost; 200 chickens killed; path 6 miles long. This reported to have been a redevelopment of the Cerro Gordo-Floyd County storm.  |
| Delaware County, Iowa.  | 16   | 10 p. m.                         | 1 2                  |              | 50,000-100,000              | Hail and wind                                      | Path stretched almost completely across the county extending from northwest to southeast for about 7 miles, then due east for about 18 miles. Loss in crops. North of Hopkinton, near the end of the storm track, farm buildings were blown down.   |
| Benton and Linn Counties, Iowa.   | 16   | 11 p. m.                         | 880                  |              | 125,000                     | Wind, hail, tornadoic                              | Much hail damage; a silo blown over and several barns damaged near Vinton and Urbana. Many trees down; in Center Point electric and telephone service was completely cut off.   |
| Denver, Colo.   | 16   | P. m.                            |                      |              | 500                         | Hail   | Loss in vegetable crops and gardens.  |
| Jackson County, Iowa.   | 17   | 12:30 a. m.                      | 440                  | 0            | 25,000                      | Tornado  | Storm struck in the rural areas northwest of Maquoketa and traveled almost due east across the northern part of that town. In the open country, many farm buildings were damaged or destroyed. Trees and wires down.  |
| Massachusetts, Boston and eastern portion of State.   | 17   | P. m.                            |                      |              |                             | Electrical and torrential rains.                   | This reported to have been one of the worst electrical storms in recent years. Houses struck by lightning; trees felled and streets flooded following the most prolonged heat wave in history. Thousands of homeward bound workers were marooned or drenched. Fire department answered about 100 calls in the greater Boston area.  |
| Oswego County, N. Y.  | 17   |                                  |                      |              | 4,500                       | Electrical and wind                                | Trees uprooted; power and communication lines broken; barn burned.  |
| Paxton and Ogallala, Nebr., and vicinities.   | 19   | 8-9 p. m., M. W. T.              | 1 4                  |              | 35,000                      | Heavy hail   | Loss in crops and gardens. A barn 5 miles north of Paxton struck by lightning and one end torn out without causing fire.  |
| Keya Paha County, Nebr., western half, into Rock County.  | 21   | 6 and 7:30 p. m., C. W. T.       | 1 8                  |              | 115,000                     | do   | Loss in crops, \$100,000; damage to buildings and loss in livestock, \$15,000. Storm reported to have been the worst one in 50 years. Path 22 miles long.   |
| Spring Lake, Minn., vicinity of.  | 21   |                                  |                      |              | 2,200                       | Electrical   | 17 cattle, huddled beneath a tree, killed by lightning.   |
| Cheyenne, Sherman, and Thomas Counties, Kans.   | 23   | 7 p. m.                          | 1 2                  |              | 100,000                     | Heavy hail   | Most severe damage in Cheyenne County, where all vegetables were destroyed in the storm's path which was 55 miles long.   |

1 Miles instead of yards.

## SEVERE LOCAL STORMS, AUGUST 1944—Continued

| Place   | Date | Time                   | Width of path, yards | Loss of life | Value of property destroyed | Character of storm   | Remarks  |
|---|------|------------------------|----------------------|--------------|-----------------------------|----------------------|--|
| Sanford to Springfield, Kans.                           | 22   | 8-10 p. m.             | 1 10                 |              | 5,000                       | Heavy hail and wind. | Considerable crop damage from hail; several farm buildings demolished; path 25 miles long.   |
| Morrill and Mitchell, Nebr., vicinities of.             | 22   | Near midnight          | 1 3                  |              | 200,000                     | Hail and rain        | Loss in potatoes, sugar beets, and beans; small crop damage; some washing from heavy rain; path 10 miles long.   |
| Hattiesburg, Miss.                                      | 24   | 6:15 p. m.             | 100                  |              | 4,000                       | Wind                 | No details.  |
| Denver, Colo.   | 26   | 2-2:30 p. m.           |                      |              | 1,000,000                   | Rain and hail        | Scattered light to heavy hail over sections of the city, broke greenhouses to the extent of 20 carloads of glass, shredded trees and vegetable crops. Underpasses were flooded. Several persons rescued from stranded and flooded automobiles. This considered one of the worst hailstorms in this vicinity in a decade. The American Red Cross Authorized War Agency offered almost blanket authority for critical materials needed for repairs and replacements. |
| Colorado Springs, Colo.                                 | 26   | 3 p. m.                | 1 3                  |              | 500                         | Hail                 | Moderate hail caused loss in vegetable crops and gardens; path 80 miles long.  |
| Morton and Stevens Counties, Kans.                      | 29   | 5-6:30 p. m., C. W. T. | 1 3-4                |              | 200,000                     | Heavy hail           | Much damage to broom corn and other crops; path 50 miles long.   |
| Kansas, southwest portion of State, east of Hutchinson. | 29   |                        |                      |              |                             | High wind            | Number of trees blown down; many shade trees and some power lines damaged.   |
| Detroit Lakes, Minn.                                    | 30   |                        |                      |              | 5,000                       | Electrical           | 2 homes destroyed by fire.   |

<sup>1</sup>Miles instead of yards.

## SOLAR RADIATION AND SUNSPOT DATA FOR AUGUST 1944

[Solar Radiation Investigations Section, I. F. HAND, in charge]

## SOLAR RADIATION OBSERVATIONS

## TABLE 1.—Solar radiation intensities during August 1944—Con.

## ALBUQUERQUE, N. MEX.

[Gram-calories per minute per square centimeter of normal surface]

**EXPLANATIONS** of the tables and references to descriptions of instruments, stations, and methods of observation, and to summaries of data, and also a list of pyrliometric stations are given in the REVIEW for January 1944, page 43.

TABLE 1.—Solar radiation intensities during August 1944

[Gram-calories per minute per square centimeter of normal surface]

## MADISON, WIS.

| Date       | Sun's zenith distance |          |       |       |       |      |        |       |       |       | Local mean solar time |            |
|------------|-----------------------|----------|-------|-------|-------|------|--------|-------|-------|-------|-----------------------|------------|
|            | 7:30 a. m.            | 78.7°    | 75.7° | 70.7° | 60.0° | 0.0° | 60.0°  | 70.7° | 75.7° | 78.7° |                       | 1:30 p. m. |
|            | 75th mer. time        | Air mass |       |       |       |      |        |       |       |       |                       |            |
|            |                       | A. M.    |       |       |       |      | P. M.  |       |       |       |                       |            |
|            |                       | e        | 5.0   | 4.0   | 3.0   | 2.0  | *1.0   | 2.0   | 3.0   | 4.0   |                       | 5.0        |
| August:    | mb.                   | cal.     | cal.  | cal.  | cal.  | cal. | cal.   | cal.  | cal.  | cal.  | mb.                   |            |
| 2          | 20.3                  |          |       | 0.34  | 0.61  | 0.98 |        |       |       |       | 25.0                  |            |
| 5          | 21.8                  | 0.54     | 0.60  |       | .68   | .95  |        |       |       |       | 22.6                  |            |
| 7          | 14.2                  | .41      | .50   | .69   | .90   | 1.22 |        |       |       |       | 15.8                  |            |
| 8          | 14.8                  | .55      | .62   | .73   | .92   | 1.20 | 1.07   |       |       |       | 15.8                  |            |
| 9          | 16.5                  | .47      | .58   | .64   | .92   | 1.26 |        |       |       |       | 13.7                  |            |
| 10         | 17.0                  | .41      | .52   | .68   | .88   | 1.08 |        |       |       |       | 19.6                  |            |
| 11         | 25.9                  |          |       |       |       | 1.15 |        |       |       |       | 25.9                  |            |
| 12         | 14.8                  | .79      | .88   | 1.01  | 1.15  | 1.41 |        |       |       |       | 14.8                  |            |
| 18         | 11.3                  |          |       | .95   | 1.03  | 1.41 |        |       |       |       | 9.8                   |            |
| 19         | 13.7                  |          | .58   | .71   | .94   | 1.18 |        |       |       |       | 12.7                  |            |
| 24         | 11.8                  |          | .79   | .94   | 1.11  | 1.34 |        |       |       |       | 12.3                  |            |
| 31         | 14.8                  | .62      | .86   | 1.01  | 1.14  | 1.35 |        |       |       |       | 12.7                  |            |
| Means      |                       | .54      | .66   | .76   | .96   | 1.23 | (1.07) |       |       |       |                       |            |
| Departures |                       | -.13     | -.11  | -.14  | -.11  | -.08 | +.02   |       |       |       |                       |            |

## LINCOLN, NEBR.

| August:    |      |  |  |        |      |      |      |      |      |      |      |
|------------|------|--|--|--------|------|------|------|------|------|------|------|
| 1          | 24.2 |  |  |        |      | 1.28 | 1.12 |      |      |      | 25.9 |
| 2          | 24.2 |  |  |        |      | 1.29 | 0.94 | 0.73 | 0.58 | 0.45 | 27.7 |
| 3          | 20.4 |  |  |        |      | 1.29 | .94  | .73  | .58  | .47  | 28.6 |
| 4          | 23.4 |  |  |        |      | 1.26 | .97  | .75  | .58  | .45  | 19.6 |
| 5          | 25.9 |  |  |        | 1.01 | 1.26 | 1.01 | .79  | .64  | .54  | 21.8 |
| 6          | 20.4 |  |  |        | 1.01 | 1.29 |      |      |      |      | 20.4 |
| 7          | 20.4 |  |  |        | 1.01 | 1.25 | 1.10 | .94  | .84  | .75  | 20.4 |
| 8          | 14.2 |  |  |        | 1.12 | 1.39 | 1.10 | .92  | .79  |      | 13.7 |
| 9          | 18.3 |  |  |        |      | 1.25 | .94  | .73  | .58  | .50  | 21.8 |
| 10         | 21.8 |  |  |        | 1.23 |      |      |      |      |      | 23.4 |
| 11         | 13.2 |  |  |        | 1.12 | 1.33 | 1.08 | .88  | .75  | .64  | 15.3 |
| 12         | 11.8 |  |  |        |      | 1.35 | 1.08 | .86  | .69  | .54  | 18.3 |
| 13         | 11.4 |  |  |        | 1.07 | 1.23 | 1.45 | 1.25 | 1.08 | .94  | 12.7 |
| Means      |      |  |  | (1.07) | 1.10 | 1.31 | 1.05 | .84  | .70  | .58  |      |
| Departures |      |  |  | +.16   | +.01 | 0    | -.01 | -.03 | -.04 | -.05 |      |

\*Extrapolated.

| Date       | Sun's zenith distance |          |       |       |       |      |       |       |       |       |            | Local mean solar time |
|------------|-----------------------|----------|-------|-------|-------|------|-------|-------|-------|-------|------------|-----------------------|
|            | 7:30 a. m.            | 78.7°    | 75.7° | 70.7° | 60.0° | 0.0° | 60.0° | 70.7° | 75.7° | 78.7° | 1:30 p. m. |                       |
|            | 75th mer. time        | Air mass |       |       |       |      |       |       |       |       |            |                       |
|            |                       | A. M.    |       |       |       |      | P. M. |       |       |       |            |                       |
|            |                       | e        | 5.0   | 4.0   | 3.0   | 2.0  | *1.0  | 2.0   | 3.0   | 4.0   | 5.0        |                       |
| August:    | mb.                   | cal.     | cal.  | cal.  | cal.  | cal. | cal.  | cal.  | cal.  | cal.  | mb.        |                       |
| 1          | 7.9                   |          |       |       | 1.04  | 1.45 |       |       |       |       | 7.9        |                       |
| 2          | 11.0                  |          | 0.70  | 0.83  | 1.04  | 1.40 |       | 1.04  |       |       | 11.0       |                       |
| 3          | 9.8                   |          |       |       | 1.06  | 1.34 |       |       |       |       | 9.1        |                       |
| 4          | 7.3                   |          | .86   | .96   | 1.11  | 1.27 | 1.18  |       |       |       | 9.1        |                       |
| 5          | 12.2                  |          |       |       | 1.07  | 1.43 |       |       |       |       | 13.6       |                       |
| 6          | 11.0                  |          |       |       | 1.05  | 1.37 | 1.21  | 1.08  | 1.02  | 0.95  | 13.1       |                       |
| 7          | 12.2                  | 0.95     | .99   | 1.07  | 1.22  | 1.46 | 1.26  |       | 1.11  |       | 12.2       |                       |
| 8          | 12.2                  |          |       |       | 1.04  | 1.46 |       |       | 1.11  |       | 11.8       |                       |
| 9          | 11.8                  | .74      | .87   | .99   | 1.16  | 1.43 |       | .95   | .87   | .74   | 9.5        |                       |
| 10         | 5.4                   | .86      | .96   | 1.08  | 1.20  | 1.43 |       | 1.16  |       |       | 7.9        |                       |
| 11         | 10.6                  |          |       |       | 1.17  | 1.43 |       |       |       |       | 9.8        |                       |
| 12         | 13.6                  |          |       |       | 1.46  | 1.39 | 1.24  | 1.12  | 1.04  | .96   | 13.6       |                       |
| 13         | 11.4                  |          |       |       | 1.44  | 1.45 |       |       |       |       | 12.2       |                       |
| 14         | 10.2                  |          | .88   | 1.00  | 1.16  | 1.45 |       |       |       |       | 12.6       |                       |
| 15         | 12.2                  |          | .88   | 1.01  | 1.15  | 1.44 |       |       |       |       | 12.2       |                       |
| 16         | 9.1                   |          |       |       | 1.36  | 1.27 | 1.20  | 1.14  | 1.09  |       | 9.5        |                       |
| 17         | 8.5                   |          |       | 1.03  | 1.18  | 1.37 | 1.32  |       |       |       | 10.2       |                       |
| 18         | 9.5                   |          | .86   | .98   | 1.12  | 1.46 | 1.33  | 1.25  | 1.18  | 1.14  | 11.4       |                       |
| 19         | 8.2                   |          |       | 1.02  | 1.18  | 1.42 | 1.31  | 1.21  | 1.16  | 1.12  | 9.8        |                       |
| 20         | 6.5                   |          |       |       | .98   | 1.56 |       |       |       |       | 6.8        |                       |
| 21         | 5.4                   | .85      | .96   | 1.07  | 1.22  | 1.48 | 1.34  | 1.22  | 1.18  | 1.15  | 7.9        |                       |
| Means      |                       | .85      | .88   | 1.00  | 1.13  | 1.42 | 1.27  | 1.14  | 1.09  | 1.02  |            |                       |
| Departures |                       | +.05     | +.01  | -.01  | -.02  | +.01 | +.06  | +.09  | +.13  | +.12  |            |                       |

## BLUE HILL, MASS.

| August:    |      |      |      |      |      |      |      |      |      |      |      |
|------------|------|------|------|------|------|------|------|------|------|------|------|
| 4          | 21.1 | 0.51 |      | 0.73 | 0.95 |      |      |      |      |      | 22.6 |
| 5          | 24.2 | .23  | 0.31 | .40  |      |      |      |      |      |      | 26.8 |
| 6          | 14.7 |      |      |      | 1.26 | 1.50 |      |      |      |      | 15.3 |
| 7          | 11.8 | .84  | .99  | 1.13 | 1.28 | 1.47 | 1.26 | 1.05 |      | 0.83 | 9.1  |
| 8          | 19.6 | .40  | .51  | .62  | .82  |      | .86  |      | 0.47 | .36  | 17.6 |
| 9          | 20.3 | .13  | .70  | .28  | .45  |      |      |      |      |      | 19.6 |
| 10         | 25.0 | .15  | .22  | .32  | .57  |      |      |      |      |      | 23.4 |
| 11         | 27.7 |      |      |      | .50  |      |      |      |      |      | 24.2 |
| 12         | 25.0 |      |      |      | .80  |      | .76  |      | .38  | .28  | 23.4 |
| 13         | 25.9 |      |      |      | .71  |      |      |      |      |      | 23.4 |
| 14         | 24.2 |      |      |      | .71  |      |      |      |      |      | 23.4 |
| 15         | 25.9 |      |      |      |      | 1.20 | 1.00 | .89  | .80  |      | 18.3 |
| 16         | 11.0 | .87  | .96  | 1.10 | 1.25 | 1.45 |      | .89  |      |      | 11.4 |
| 17         | 10.2 |      |      | 1.15 | 1.28 | 1.47 | 1.18 | .94  | .80  | .69  | 10.2 |
| 18         | 15.3 | .60  | .69  | .81  | .94  |      | 1.01 | .78  |      |      | 19.0 |
| 19         | 19.0 |      |      |      |      | .86  | .58  | .40  | .27  |      | 21.8 |
| 20         | 11.8 | .89  | .98  | 1.08 | 1.20 |      |      |      |      |      | 9.8  |
| 21         | 11.0 | .79  | .89  | 1.02 | 1.19 |      |      |      |      |      | 11.0 |
| 22         | 12.3 | .84  | .93  | 1.05 | 1.18 | 1.46 | 1.22 | 1.05 | .93  | .85  | 11.4 |
| 23         | 11.8 | .81  | .91  | 1.03 | 1.18 |      |      |      |      |      | 13.2 |
| 24         | 14.2 | .59  | .69  | .83  | .96  |      |      |      |      |      | 14.2 |
| 25         | 15.3 | .75  | .84  | .97  | 1.14 |      |      |      |      |      | 13.7 |
| Means      |      | .60  | .74  | .84  | .97  | 1.47 | 1.04 | .90  | .68  | .58  |      |
| Departures |      | -.05 | -.04 | -.04 | -.07 | +.17 | 0    | +.05 | -.01 | -.02 |      |

\*Extrapolated.